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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/599,438

02/27/2008

Ulrich Craemer

78857.105096

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7590

12/08/2009

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EXAMINER

CHEUNG, MANKO

ART UNIT

PAPER NUMBER

2863

MAIL DATE

DELIVERY MODE

12/08/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/599,438	<b>Applicant(s)</b> CRAEMER ET AL.	
	<b>Examiner</b> Manko Cheung	<b>Art Unit</b> 2863	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 28 October 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 September 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |                                                                                      |                                                                   |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____                                                          | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Inventorship***

1. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

### ***Claim Rejections - 35 USC § 101***

2. Previous rejections under 35 U.S.C. 101, are withdrawn in view of Applicant's Amendment filed on August 3, 2009.

### ***Claim Rejections - 35 USC § 112***

3. Previous rejections under 35 U.S.C. 112, second paragraph, are withdrawn in view of Applicant's Amendment filed on August 3, 2009.

**NOTE:** The Examiner now interprets the sensor having “a signal-value-range multiplex output” and “not [having] a signal-value-range multiplex output” according to paragraph 0013 of the specification, figure 4a and figure 4b. Figure 4a shows the measuring signal, that is, “the signal-value-range multiplex output”

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and 4b shows “not a signal-value-range multiplex output”. **The Examiner interprets “a signal-value-range multiplex output” as being synonymous with “digital signal”**, having a logic low level and logic high level with a pulse width between the rising edge and trailing edge, it is clearly indicated in figure 4a; **the Examiner interprets “not [having] a signal-value-range multiplex output” as being synonymous with “analog signal”**, that is, linear and indicated by figure 4b.

### ***Claim Objections***

4. Claim 1 is objected to because of the following informalities:

In lines 13-15, the claim recites “recognizing the sensor as a signal-value-range multiplex output type sensor if the first and second conditions have been met, then a sensor having a signal-value-range multiplex output for the measuring signal will be recognized”.

It is redundant to first recognize the sensor as a signal-value-range multiplex output type sensor and to recognize a sensor having a signal-value-range multiplex output at the end.

The Examiner read the claim as “recognizing the sensor as a signal-value-range multiplex output type sensor if the first and second conditions have been met”.

Appropriate correction is required.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. **Claim 1-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Berger et al. (U.S. Patent No. 5,982,290; hereinafter Berger) in view of Yun (U.S. Patent No. 6,111,530) and Slates et al. (U.S. Patent Application Publication No. 2004/0158435; hereinafter Slate).**

**Regarding claim 1**, Berger discloses a method for recognizing a sensor type (*Berger, column 1, lines 55-59, determining whether the liquid level sensor is an analog type or a digital type sensor*), the method performed by a program embodied in tangible computer-readable media (*Berger, column 2, lines 59-65, microprocessor is the computer-readable media*) and comprising the following steps:

checking a first condition that will have been met (*Berger, figure 3, the first condition is step 101*),

checking a second condition if the first condition has been met (*Berger, figure 3, the first condition is step 101, the second condition is step 106, if the first condition is met [YES], the next condition step 106 will be checked*).

determining whether the sensor (*Berger, figure 1, sensor 18 or 18'*) is

(a) a signal-value-range multiplex output type sensor (*i.e.*, *digital sensor*, see *Berger column 3, lines 3-6, the digital sensor 18' has signal-value-range multiplex output, see also figure 2B, element 24'*) having at least two different outputs that are multiplexed (*Berger, figure 1, two different output from sensor 18 and 18' are multiplexed to data wire 16*), or

(b) not a signal-value-range multiplex output type sensor (*i.e.*, *analog sensor*, see *Berger, column 2: line 66 to column 3: line 3, the analog sensor 18 not having signal-value-range multiplex output, see also figure 2A, element 24*) having at least two different outputs that are multiplexed (*Berger, figure 1, two different output from sensor 18 and 18' are multiplexed to data wire 16*), including:

recognizing the sensor as a signal-value-range multiplex output type sensor if the first and second conditions have been met (*i.e.*, *digital sensor*, see *Berger column 3, lines 3-6, the digital sensor 18' has signal-value-range multiplex output, see also figure 2B, element 24'*; also see figure 3, if the first [step 101] and the second condition [step 106] are met [YES in both step], it will go to step 112, which means a pulse type fuel sensor [pulse type sensor as depicted in figure 2B has signal-value-range multiplex output] is verified and set), and

recognizing the sensor as not a signal-value-range multiplex output type sensor if at least one of the conditions has not been met (*Berger, column 5, lines 16-24; the first condition  $R\_DIFF$  is not met, therefore, the sensor is an analog sensor; see also Berger, column 2: line 66 to column 3: line 3 and figure*

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2A, element 24, the analog sensor 18 not having signal-value-range multiplex output).

*These interpretations are in keeping with examiner's above comments concerning the language "signal-value-range multiplex output". In essence, the examiner interprets the claim to be determining whether a sensor is analog or digital based upon its output.*

However, Berger fails to disclose the step of checking a first condition that will have been met **if a measuring signal of a sensor exceeds a first threshold.**

Yun teaches a method for determining a signal level by measuring if the signal exceeds a threshold voltage (*Yun, column 1, line 22-28, see also figure 2,  $V_{in}$  is the measuring signal, if the signal exceeds 2.5V [2.5V is the first threshold], then it is recognized as a logic high*).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use the signal comparing method as taught by Yun as Berger's first condition checking criterion because it would allow a user to easily distinguish the logic level from a linear analog signal (*see Yun, figure 2, the threshold comparison method is used so that the first hump of the analog signal would not be identified as logic high*).

Berger in view of Yun fails to disclose the step of checking a second condition if the first condition has been met, with the second condition having

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been met **if a gradient of the measuring signal is greater in amount than a predefined second threshold.**

Slate teaches a method of comparing the slew rate of a signal to a previous known slew rate value (*Slate, page 1-2, paragraph 0012, the slew rate is the gradient of a signal, it is well known in the art that the gradient of a signal is the slope of the signal and the slew rate is the change in Voltage with respect to the change in transition time from one voltage level to another voltage level, thus slew rate means gradient; the previous known slew rate is the predefined second threshold*).

The Examiner acknowledges that the invention taught by Slate is not directed to determining a signal-value-range multiplex output. It's only slate's slew rate comparing method being used as a generic teaching of a well known signal identifying method; as such, Slate's slew rate comparing method could be applied to any signal.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use the slew rate comparing method as taught by Slate as Berger's second condition checking method. It is well known in the art that the pulse (*see Berger, figure 2B*) disclose in Berger would have an very high slew rate [ideally infinite] when the signal is having transition from logic low to logic high/ logic high to logic low level. One would have been motivated to use Slate's slew rate comparing method as Berger's second condition checking criterion because such method would allow a user to clearly distinguish the digital signal from analog signal (*see Berger, figure 2A and 2B, pulse in 2B would have*



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*a very high slew rate, output signal in 2A would have a small slew rate).* Such modification would allow a person to use the slew rate comparing method to identify an analog signal from digital signal.

**Regarding claim 2**, Berger discloses wherein the first and second conditions are in each case checked close in time to a start of operation of the sensor (*Berger, column 4, lines 9-14, the sensor determining steps are performed after the power is applied to the controller, "the power is applied to the controller" indicates a start of operation*).

**Regarding claim 3**, Berger discloses wherein the sensor having the signal-value-range multiplex output for the measuring signal will be recognized if the first and second conditions have been met a predefined number of times, and otherwise the sensor not having a signal-value-range multiplex output for the measuring signal will be recognized (*Berger, column 4: line 9 to column 6: line 40, see also figure 3, when the machine starts, no sensor type is verified, so it will go to step 101, when first condition is met, step 106 is processed and sensor is verified at step 112, thus the first and second condition is checked one time [one is predefined number of times]*).

**Regarding claim 4**, Berger discloses wherein the following steps are carried out in the case of a recognized sensor having a signal-value-range multiplex output:

the first and, dependent thereon, the second conditions are checked  
*(Berger, column 4: line 9 to column 6: line 40, see also figure 3, after step 101 and step 106 is checked, the process will restart and checked again),*

a measurement value of the measuring signal, which value was registered a pre-definable period of time before the first and second condition were met, will be assigned to either a first **or** a second measured variable depending on the sign of the gradient of the measuring signal **or** depending on the measurement value's absolute value *(Berger, column 3, line 19-51, the process of determining a analog or digital sensor is executed by a microprocessor, the signal being subjected to conditions checked would be assigned to a variable [a first variable] in order for the microprocessor to execute the process of determining sensor, it is well known in the art that process [numbers] being calculate in a microprocessor would be stored in a register and each process [number] stored in a register would corresponds to a variable in the lower level computer language; see also figure 2A and 2B, the measuring signals are positive and the assigning variable would depends on the absolute value of the measuring signal because the signals are in the positive territory).*

**Regarding claim 5,** Berger discloses wherein a fault will be recognized if the first and second condition conditions are not met during a pre-definable period of time *(Berger, column 4, lines 23-36, step 101 is the first condition, it's being checked if the timer holds the count number 153, a fault [inaccurate display*

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*of fuel level] will be recognized if the first condition is not met during the pre-definable period of time, which is five seconds).*

**Regarding claim 6**, Berger discloses a method for determining whether or not a sensor is a signal-value-range multiplex output type sensor having at least two different outputs that are multiplexed (*Berger, column 1, lines 55-59, determining whether the liquid level sensor is an analog type or a digital type sensor*),, the method performed by a program embodied in tangible computer-readable media (*Berger, column 2, lines 59-65, microprocessor is the computer-readable media*) and comprising:

determining whether time elapsed exceed a first threshold (*Berger, figure 3, step 101*) and if so, determining whether a the pulse width successfully measured for five second (*Berger, figure 3, step 106*), and if so, identifying the a sensor having as a signal-value- range multiplex output type sensor for the measuring signal is recognized (*i.e., digital sensor, see Berger column 3, lines 3-6, the digital sensor 18' has signal-value-range multiplex output, see also figure 2B, element 24'; also see figure 3, if the first [step 101] and the second determining [step 106] exceed the thresholds [YES in both step], it will go to step 112, which means a pulse type fuel sensor [pulse type sensor as depicted in figure 2B has signal-value-range multiplex output] is recognized*),

and if either step of determining fails, then identifying the sensor as not being a signal-value-range multiplex output type sensor (*Berger, column 5, lines 16-24; the first condition R\_DIFF is not met, therefore, the sensor is an analog*

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*sensor; see also Berger, column 2: line 66 to column 3: line 3 and figure 2A, element 24, the analog sensor 18 not having signal-value-range multiplex output).*

However, Berger fails to disclose the step of determining whether a measuring signal of a sensor exceeds a first threshold.

Yun teaches a method for determining a signal level by measuring if the signal exceeds a threshold voltage (*Yun, column 1, line 22-28, see also figure 2,  $V_{in}$  is the measuring signal, if the signal exceeds 2.5V [2.5V is the first threshold], then it is recognized as a logic high*).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use the signal comparing method as taught by Yun as Berger's first determining step because it would allow a user to easily distinguish the logic level from a linear analog signal (*see Yun, figure 2, the threshold comparison method is used so that the first hump of the analog signal would not be identified as logic high*).

Berger in view of Yun fails to disclose the step of determining whether a gradient of the measuring signal is greater in amount than a predefined second threshold.

Slate teaches a method of comparing the slew rate of a signal to a previous known slew rate value (*Slate, page 1-2, paragraph 0012, the slew rate is the gradient of a signal, it is well known in the art that the gradient of a signal is the slope of the signal and the slew rate is the change in Voltage with respect to the change in transition time from one voltage level to another voltage level, thus*

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*slew rate means gradient; the previous known slew rate is the predefined second threshold).*

The Examiner acknowledges that the invention taught by Slate is not directed to determining a signal-value-range multiplex output. It's only slate's slew rate comparing method being used as a generic teaching of a well known signal identifying method; as such, Slate's slew rate comparing method could be applied to any signal.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use the slew rate comparing method as taught by Slate as Berger's second determining step. It is well known in the art that the pulse (*see Berger, figure 2B*) disclose in Berger would have an very high slew rate [ideally infinite] when the signal is having transition from logic low to logic high/ logic high to logic low level. One would have been motivated to use Slate's slew rate comparing method as Berger's second condition checking criterion because such method would allow a user to clearly distinguish the digital signal from analog signal (*see Berger, figure 2A and 2B, pulse in 2B would have a very high slew rate, output signal in 2A would have a small slew rate*). Such modification would allow a person to use the slew rate comparing method to identify an analog signal from digital signal.

**Regarding claim 7**, Berger discloses wherein the steps of determining are in each case checked close in time to a start of operation of the sensor. (*Berger, column 4, lines 9-14, the sensor determining steps are perform after the*

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*power is applied to the controller, "the power is applied to the controller" indicates a start of operation).*

**Regarding claim 8,** Berger discloses wherein the sensor having the signal-value-range multiplex output for the measuring signal will be recognized if the steps of determining have been met a predefined number of times, and otherwise the sensor not having a signal-value-range multiplex output for the measuring signal will be recognized. *(Berger, column 4: line 9 to column 6: line 40, see also figure 3, when the machine starts, no sensor type is verified, so it will go to step 101, when first condition is met, step 106 is process and sensor is verified at step 112, thus the first and second condition is checked one time [one is predefined number of times]).*

**Regarding claim 9,** Berger discloses wherein the following steps are carried out in the case of a recognized sensor having a signal-value-range multiplex output:

repeating the steps of determining *(Berger, column 4: line 9 to column 6: line 40, see also figure 3, after step 101 and step 106 is checked, the process will restart and checked again),*

assigning a measurement value of the measuring signal, which value was registered a pre-definable period of time before the steps of determining were met, to either a first or a second measured variable depending on the sign of the gradient of the measuring signal or depending on the measurement value's

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absolute value (*Berger, column 3, line 19-51, the process of determining a analog or digital sensor is executed by a microprocessor, the signal being subjected to conditions checked would be assigned to a variable [a first variable] in order for the microprocessor to execute the process of determining sensor, it is well known in the art that process [numbers] being calculate in a microprocessor would be stored in a register and each process [number] stored in a register would corresponds to a variable in the lower level computer language; see also figure 2A and 2B, the measuring signals are positive and the assigning variable would depends on the absolute value of the measuring signal because the signals are in the positive territory*).

**Regarding claim 10**, Berger discloses wherein a fault will be recognized if the steps of determining are not met during a pre-definable period of time.

*(Berger, column 4, lines 23-36, step 101 is the first condition, it's being checked if the timer holds the count number 153, a fault [inaccurate display of fuel level] will be recognized if the first condition is not met during the pre-definable period of time, which is five seconds).*

**Regarding claim 11**, Berger discloses an arrangement for recognizing whether or not a sensor is a signal-value-range multiplex output type sensor having at least two different outputs that are multiplexed (*Berger, column 1, lines 55-59, determining whether the liquid level sensor is an analog type or a digital type sensor*), comprising:

means (*Berger, column 2, lines 59-65, microprocessor is the means*) for determining whether time elapsed exceed a first threshold (*Berger, figure 3, step 101*) and

means for determining whether a the pulse width successfully measured for five second (*Berger, figure 3, step 106*),

wherein the sensor is recognized as a signal-value-range multiplex output type sensor if both determinations are met (*i.e., digital sensor, see Berger column 3, lines 3-6, the digital sensor 18' has signal-value-range multiplex output, see also figure 2B, element 24'*; also see figure 3, if the first [step 101] and the second determining [step 106] exceed the thresholds [YES in both step], it will go to step 112, which means a pulse type fuel sensor [pulse type sensor as depicted in figure 2B has signal-value-range multiplex output] is recognized), and if either determination fails, then the sensor is not recognized as a signal- value-range multiplex output type sensor (*Berger, column 5, lines 16-24; the first condition  $R\_DIFF$  is not met, therefore, the sensor is an analog sensor; see also Berger, column 2: line 66 to column 3: line 3 and figure 2A, element 24, the analog sensor 18 not having signal-value-range multiplex output*).

Berger fails to disclose the first determining step is determining whether a measuring signal of a sensor exceeds a first threshold.

Yun teaches a method for determining a signal level by measuring if the signal exceeds a threshold voltage (*Yun, column 1, line 22-28, see also figure 2,  $V_{in}$  is the measuring signal, if the signal exceeds 2.5V [2.5V is the first threshold], then it is recognized as a logic high*).



It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use the signal comparing method as taught by Yun as Berger's first determining step because it would allow a user to easily distinguish the logic level from a linear analog signal (*see Yun, figure 2, the threshold comparison method is used so that the first hump of the analog signal would not be identified as logic high*).

Berger in view of Yun fails to disclose the step of determining whether a gradient of the measuring signal is greater in amount than a predefined second threshold.

Slate teaches a method of comparing the slew rate of a signal to a previous known slew rate value (*Slate, page 1-2, paragraph 0012, the slew rate is the gradient of a signal, it is well known in the art that the gradient of a signal is the slope of the signal and the slew rate is the change in Voltage with respect to the change in transition time from one voltage level to another voltage level, thus slew rate means gradient; the previous known slew rate is the predefined second threshold*).

The Examiner acknowledges that the invention taught by Slate is not directed to determining a signal-value-range multiplex output. It's only slate's slew rate comparing method being used as a generic teaching of a well known signal identifying method; as such, Slate's slew rate comparing method could be applied to any signal.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use the slew rate comparing method as taught by

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Slate as Berger's second determining step. It is well known in the art that the pulse (*see Berger, figure 2B*) disclose in Berger would have an very high slew rate [ideally infinite] when the signal is having transition from logic low to logic high/ logic high to logic low level. One would have been motivated to use Slate's slew rate comparing method as Berger's second condition checking criterion because such method would allow a user to clearly distinguish the digital signal from analog signal (*see Berger, figure 2A and 2B, pulse in 2B would have a very high slew rate, output signal in 2A would have a small slew rate*). Such modification would allow a person to use the slew rate comparing method to identify an analog signal from digital signal.

**Regarding claim 12**, Berger discloses wherein the determinations are performed close in time to a start of operation of the sensor. (*Berger, column 4, lines 9-14, the sensor determining steps are perform after the power is applied to the controller, "the power is applied to the controller" indicates a start of operation*).

**Regarding claim 13**, Berger discloses wherein the sensor having the signal-value-range multiplex output for the measuring signal will be recognized if the determinations have been met a predefined number of times, and otherwise the sensor not having the signal-value-range multiplex output for the measuring signal will be recognized. (*Berger, column 4: line 9 to column 6: line 40, see also figure 3, when the machine starts, no sensor type is verified, so it will go to step*

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*101, when first condition is met, step 106 is process and sensor is verified at step 112, thus the first and second condition is checked one time [one is predefined number of times]).*

**Regarding claim 14**, Berger discloses wherein in the case of a recognized sensor having the signal-value-range multiplex output a measurement value of the measuring signal, which value was registered a pre-definable period of time before the determinations were met, is assigned to either a first or a second measured variable depending on the sign of the gradient of the measuring signal or depending on the measurement value's absolute value. *(Berger, column 3, line 19-51, the process of determining a analog or digital sensor is executed by a microprocessor, the signal being subjected to conditions checked would be assigned to a variable [a first variable] in order for the microprocessor to execute the process of determining sensor, it is well known in the art that process [numbers] being calculate in a microprocessor would be stored in a register and each process [number] stored in a register would corresponds to a variable in the lower level computer language; see also figure 2A and 2B, the measuring signals are positive and the assigning variable would depends on the absolute value of the measuring signal because the signals are in the positive territory).*

**Regarding claim 15**, Berger discloses wherein a fault will be recognized if the determinations are not met during a pre-definable period of time. *(Berger,*

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*column 4, lines 23-36, step 101 is the first condition, it's being checked if the timer holds the count number 153, a fault [inaccurate display of fuel level] will be recognized if the first condition is not met during the pre-definable period of time, which is five seconds).*

### ***Response to Arguments***

1. Applicant's arguments filed August 3, 2009 have been fully considered but they are not persuasive.
2. Applicant argues that *Yook* does not teach a method for determining a type of a sensor.

In response, the Examiner respectfully disagrees. According to Webster's II New Riverside University Dictionary, the word "type" is defined as "a group of things that share common traits or characteristics distinguishing them as an identifiable group or class". *Yook* teaches a method for determining whether a sensor has failed; "failing" is the characteristic of a sensor and it is identified as a bad sensor. Therefore, the invention of *Yook* teaches the method for determining a type of sensor, to distinguish between the bad sensor (failing type) and the good sensor.

3. Applicant's arguments are directed to the newly added limitations. These arguments have been considered but are, therefore, moot in view of the new ground(s) of rejection.

***Conclusion***

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent Application Publication No. 2003/0234678 to Cleary et al. teaches that transition of signal from logic low to logic high has very high slew rate [paragraph 0004].

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Manko Cheung whose telephone number is

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(571) 270-7917. The examiner can normally be reached on Monday to Thursday, 9:00-16:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew A. Dunn can be reached on (571) 272-2312. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/M.C./

December 2, 2009

**Drew A. Dunn**  
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